

# BioBlitz 3: iNaturalist

## Middle School Biodiversity Curriculum

### **Class Time Required:**

1 class period (50-65 minutes) plus field trip time  
Extension (30-45 minutes)

### **Materials Needed:**

- Engagement: PowerPoint 1, “BioBlitz 3: iNaturalist”
- Investigation and Explanation: Attachment 1 “BioBlitz 3: iNaturalist”; Access to Internet through Computers or Smartphones; Ability to Take Digital Photographs; Field Guides (either books or online)
- Extension: Kraft Paper, Markers

**Teacher Preparation:** 2-3 hours setting up iNaturalist project for student access and arranging field trip

**Student Knowledge:** Understanding of importance of biodiversity and knowing what type of organisms are in a given area

**Vocabulary:** biodiversity, iNaturalist, BioBlitz, organism

### **Next Generation Science Standards:**

#### • **MS-LS2-1.**

Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

#### • **MS-LS2-4.**

Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations

### **Overview:**

The stated objective of iNaturalist is to make a “living record of life on Earth” that is open to everyone, everywhere. iNaturalist is an online program that allows people to take and upload photographs of organisms and information for their own projects, or to add to another project that has been started by someone else. The photographs and accompanying information can be submitted directly from the field or added at a later time, depending on the available technological resources and/or instructor choice.

### **Background Information:**

iNaturalist began in 2008 as part of a final project for graduate students at the University of California-Berkeley. As of 2015, the California Academy of Sciences has provided support for iNaturalist. The website, [www.inaturalist.org](http://www.inaturalist.org), provides an overview of the potential of using this website for a biodiversity discovery project, such as a BioBlitz. A BioBlitz is a short (often 24 hours or less) inventory of living organisms found within a specified geographic area. A BioBlitz may be conducted on all organisms or confined to a single taxonomic group or habitat.

It is easy to start or join a “Project” on iNaturalist, once a participant registers on the site. In addition to computers, mobile applications are available for iPhone, iPad, and Android devices. For simplified directions to set up an iNaturalist project, see Attachment 1 “BioBlitz 3: iNaturalist.” An example of an extensive high school ecology project using iNaturalist can be found at: <http://www.protecthabitat.com>. Examples of simpler middle school projects can be found at: <http://www.inaturalist.org/projects/search?utf8=%E2%9C%93&q=middle+school&commit=Search>.

Students under the age of 13 require parental approval to use, due to the Children’s Online Privacy Protection Act of 1998. Please read more information specific to schools in the Teacher’s Guide on the iNaturalist website: <http://www.inaturalist.org/pages/teacher%27s+guide>.

For species identification purposes, students may use hard copy guides or keys. Online identification guides are also available through the iNaturalist website. iNaturalist may also be used to create personalized field guides for a specific area. Another online source of field guides is <http://enature.com/home>.

### **Focus Questions:**

What type of organisms can we find in our BioBlitz area?  
How do I document individual organisms so the species can be identified?  
What are different field guides I can use to identify an organism?



### **Learning Target:**

I can document accurate observations to determine the different types of living organisms in my BioBlitz area.

### **Engagement:**

(Time will vary)

Before participating in a BioBlitz, or species inventory, the instructor will ensure that rules are clearly established for the field trip and provide an outline of the day to the students and any chaperones. Prior to the field trip, the instructor will establish that there is adequate adult supervision for the trip, necessary paperwork has been

completed, and appropriate safety precautions have been made and explained to all involved.

Prior to the field trip, the instructor will show students PowerPoint 1, "BioBlitz 3: iNaturalist," to introduce the program and explain how students will be using iNaturalist. The instructor will provide opportunities throughout the PowerPoint for students to verbalize the learning target.

**Investigation:**

(Time will vary)

Students will take conduct a short BioBlitz, whether it is on school grounds or at a nearby natural area.

**Explanation:**

(Time will vary)

Students will record species found during their BioBlitz. They may enter the data at the field site or upon return to the classroom. If entering information after the investigation, the instructor will ensure that students have taken the appropriate notes to enter information and have photographs ready to upload to the website.

**Extension:**

(30-45 minutes)

The students will create a mural showing the different species found during their BioBlitz. Each student will draw an organism that they found during their BioBlitz, using their actual digital documented observation. Their drawings should be as accurate as possible. Students will continue to add organisms to recreate the environment they are studying in the classroom.

**References:**

Byrne-Wittmann, Julie. "Protecthabitat." *Protecthabitat*. N.p., n.d. Web. 21 Sept. 2014. <http://www.protecthabitat.com/>

*iNaturalist.org*. Ed. Ken-Ichi Ueda and Scott Loarie. California Academy of Sciences, n.d. Web. 27 July 2014. <<http://www.inaturalist.org>>

United States. National Park Service. "U.S. National Park ServiceHistory." *National Parks Service*. U.S. Department of the Interior, 20 June 2014. Web. 14 July 2014. <<http://www.nps.gov/aboutus/history.htm>>